

5
Handwritten signature or initials.

1. A method of detecting wear on a substrate, said method comprising:
 - a. coating a composition comprising a fluorescent compound on the surface of a substrate;
 - b. exposing the coated surface to wear;
 - c. exposing the coated surface to radiation capable of exciting the fluorescent compound; and
 - d. detecting the presence or absence of fluorescence.

2. The method of claim 1, wherein said radiation comprises ultraviolet light.

10

3. The method of claim 1, wherein said radiation has a wavelength of from 200 nm to 400 nm.

4. The method of claim 1, wherein said fluorescent compound emits visible light.

15

5. The method of claim 1, wherein said fluorescent compound emits radiation having a wavelength of from 400 nm to 750 nm.

6. The method of claim 1, wherein said detecting comprises visually observing the presence or absence of fluorescence.

20

7. The method of claim 1, wherein exposing the coated surface to radiation occurs after a predetermined period of time.

25

8. The method of claim 1, wherein the substrate comprises grout, cement clay, stone, brick, ceramic, polymer composite, wood, or a combination thereof.

9. The method of claim 1, wherein the substrate comprises marble, granite, limestone, wood, vinyl, linoleum, or a combination thereof.

30

10. The method of claim 1, wherein the substrate comprises a floor, a wall, or a pool.

11. The method of claim 1, wherein the substrate is located in a structure
5 selected from the group consisting of dwelling, garage, hospital, store, restaurant, school, office, and gymnasium.

12. The method of claim 1, wherein the substrate comprises an article selected
10 from the group consisting of cooking articles, counter tops and laboratory bench tops.

13. The method of claim 1, wherein the substrate comprises furniture, fabric,
woven web, nonwoven web, film or a combination thereof.

14. The method of claim 1, further comprising determining the fluorescence
15 intensity.

15. The method of claim 14, further comprising correlating the intensity of the
fluorescence with the degree of wear on the coated surface.

16. The method of claim 1, wherein said composition comprises wax, acrylate,
20 urethane, epoxy or a combination thereof.

17. The method of claim 1, wherein said coating composition comprises a floor
finishing composition, antimicrobial compositions, mildew growth preventing
25 compositions, or a polishing composition.

18. The method of claim 1, further comprising coating a second composition
on the coated surface prior to exposing said coated surface to wear.

19. The method of claim 1, further comprising coating a first layer and a second layer on said coated substrate after coating said substrate with said composition comprising a fluorescent compound.

5 20. The method of claim 1, wherein said step of coating comprises coating a portion of said substrate surface with said composition comprising a fluorescent compound.

10 21. The method of claim 1, further comprising coating a first portion of said substrate surface with said composition comprising a fluorescent compound and coating a second portion of said substrate with a second composition, said second composition being essentially free of said fluorescent compound.

15 22. The method of claim 1, wherein said exposing said coated surface to wear comprises exposing said coated surface to pedestrian traffic.

23. The method of claim 1, wherein said exposing said coated surface to wear comprises exposing said coated surface to repeated contact with other substrates.

20 24. The method of claim 1, further comprising
i. exposing a first area of the coated surface to radiation capable of exciting the fluorescent compound;
ii. exposing a second area of the coated surface to radiation capable of exciting the fluorescent compound, said second area having experienced
25 relatively more wear than said first area; and
iii. comparing the intensity of the fluorescence of said first area with the intensity of the fluorescence of said second area.

30 25. The method of claim 1, further comprising
i. exposing the coated surface to radiation capable of exciting the fluorescent compound prior to exposing said coated surface to wear;

- ii. detecting the intensity of the fluorescence emitted by said fluorescent compound at step (i);
- iii. exposing the coated substrate to radiation capable of exciting the fluorescent compound after exposing said coated surface to wear;
- 5 iv. detecting the intensity of the fluorescence emitted by said fluorescent compound at step (iii);
- v. comparing the fluorescence intensity at step (ii) with the fluorescence intensity at step (iv).

10 26. A method of detecting wear on a substrate surface previously coated with a composition comprising a fluorescent compound, the coated surface having been exposed to wear, said method comprising:

- a. exposing the surface to radiation capable of exciting the fluorescent compound; and
- b. detecting the presence or absence of fluorescence.

15 27. The method of claim 26, further correlating the intensity of the fluorescence with the degree of wear on the coated surface.

20 28. A method of determining the degree of wear on a coated surface of a substrate, said surface having previously been coated with a composition comprising a fluorescent compound, said method comprising:

- a. exposing the coated substrate to radiation capable of exciting the fluorescent compound;
- b. measuring the fluorescence intensity emitted from said coated surface; and
- c. comparing the measured fluorescence intensity with a predetermined fluorescence intensity.

25 29. The method of claim 28, wherein said predetermined fluorescence intensity comprises a calibration curve.

30

